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Blindness Control in Canada

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BLINDNESS according to the dictionary means sightlessness. This literal interpretation is official in India and is presumed in Greece, Belgium and most South American countries where blindness is not specifically defined. In Egypt and nearby countries a person is blind if he can not see well enough to count fingers at a distance of one metre (1). (This is less than 1% visual efficiency.)

These traditional conceptions of blindness have been modified during the past fifty years in many other countries to permit the extension of welfare benefits to a larger number of poor sighted persons. For example in Germany the upper limit of blindness is 1/25 vision; in France 1/20 and in Mexico 1/10. This is similar to Great Britain where the basic standard is 20/400 vision with further concessions to those with marked visual field defects. This is similar to the definition adopted by the World Council for the Welfare of the Blind in 1954 (2). Canada and the United States have the most generous definitions of blindness. Here the upper limit is vision of 20/200 in both eyes when wearing proper glasses, or restriction of visual fields to less than 20 degrees irrespective of the central acuity of vision. This represents 20% visual efficiency and not 1/10, as the expression 20/200 would mathematically indicate. It should be noted that 20/200 is not used here as an ordinary fraction. It merely means that at a distance of 20 feet the same large eye chart letter can be read that a person with normal vision can read at a distance of 200 feet. It is obvious from the above that it is impossible to compare statistics of blindness throughout the world due to the variations in definitions used.

We consider our definition of blindness to be as lenient as possible as it includes the industrially blind. A person with just 20/200 vision with glasses would not appear blind to the casual observer. With such vision it is possible to go out of doors alone in traffic and to do many kinds of labouring or house

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work. However, the reading of newsprint is not possible except in certain eye conditions with the aid of telescopic lenses. The ability to work with this vision depends largely on the ambition of the person concerned and the availability of suitable work. We know of persons with 20/400 vision who are gainfully employed as sighted persons.

Blindness allowances are made available in this country, as in some others, on the basis of a means test. There is, however, a large class of poor sighted persons in all countries who cannot be considered blind, but are so handicapped that it is difficult for them either to secure an education or employment. Their vision may range from 20/70 up to the limit of blindness. This class constitutes a considerable welfare problem for which no solution is in sight. Children in this poor sighted group are especially unfortunate as most of them cannot obtain a school education. In some countries sight saving classes are solving this problem. Great Britain and the United States lead in this respect. Canada lags far behind as we have only eleven sight saving classes with 352 pupils, the majority being in Ontario (3). The Ontario Department of Education also supplies teaching aids for poor sighted children to any school which applies. We obviously need more sight saving classes in Canada.

The education of blind children is well looked after as there is enough accommodation in the six residential Canadian schools to accommodate all of them. Three of these schools are private and are located in Montreal. The other three are provincial and are located at Halifax, N.S., Brantford, Ont., and Vancouver, B.C. Children from other provinces can be sent to the nearest school at provincial expense. There are 553 pupils in all these schools (4).

INCIDENCE OF BLINDNESS

There were 21,010 persons in Canada registered as blind by the Canadian National Institute for the Blind in 1955. This does not include all the blind as the Sickness Survey of the Department of National Health and Welfare indicates that there are some 9000 more in the country (5), making a total of about 30,000 or approximately one in five hundred of our population. This figure is low in comparison to that found in backward and hot countries where the incidence may be as high as one in twenty-five of the population. Trachoma is the greatest offender in these backward countries. In some villages 50% to 90% of the children have this disease (6). Other types of conjunctivitis, venereal disease, tuberculosis, smallpox, onchocerciasis, leprosy, nutritional deficiencies, injuries and cataract also leave a heavy toll of blindness. Main contributing factors are hot climate, poor hygiene and sanitation, overcrowding, poverty, and lack of medical and welfare services. An energetic campaign to control this blindness is being conducted by various United Nations Agencies, particularly UNICEF (United Nations Children's Fund). This work is proceeding in countries around the Mediterranean, in Central Africa, the Middle East, Indonesia and Taiwan (China). It has been shown that trachoma, especially in children, can be wiped out by the use of sulphonamides, antibiotics, soap and water, and control of flies, dirt and sanitation. It will take years before the eye scourges of backward countries can be eliminated.

In Canada, our temperate climate, high standard of living and hygiene and good medical and welfare services, prevent the occurrence of the eye scourges of the east. However, we have our own serious eye problems. Much of our blindness could have been prevented and several thousand of our blind could have sight restored. This situation is due to several factors both medical, economic and social. Surveys indicate that we have nearly enough doctors in this country, but our medical eye specialists, more than four hundred in number, are concentrated in urban centres. Large thinly populated areas have no eye specialists within distances of from one to five hundred miles. In addition, many people in all areas are too poor to pay for medical care. Moreover, many persons neglect eye conditions because of ignorance, inertia or carelessness. Although oculists are generous in giving free services to indigent or needy persons, difficulty often occurs in getting hospital beds for public ward eye cases and in some areas it is impossible to get urgent eye cases into hospital as the municipalities are too poor to pay the cost of admitting them as public ward patients. As a result much blindness occurs from delay or lack of proper medical treatment, or from the poverty of patients.

Travelling eye clinics in certain rural areas would greatly assist in preventing blindness. This is a provincial responsibility. Such clinics could also prescribe eye glasses for needy poor sighted persons. At present in many rural areas it is impossible to obtain proper eye tests or eye glasses. These statements are not just conjecture but are the result of our experience in the Blindness Control Division—gained while accompanying ophthalmologists we engage at federal expense to travel in outlying areas to examine applicants for blindness allowance. We find it necessary to send these eye specialists several times each year to various outlying areas. The trips last from one to five weeks during which the oculist may travel from five hundred to one thousand miles or more while he examines from two hundred to three hundred applicants. In addition, in the Province of Quebec our travelling oculists while on these trips also examine a still larger number of needy poor sighted persons in order to prescribe eye glasses. The Provincial Government of Quebec pays for these eye examinations, but does not supply eye glasses. They are offered to the patients at a nominal cost by the Quebec Division of the Canadian National Institute for the Blind. If the patient has no money, the C.N.I.B. will supply the glasses free.

It has been already pointed out that blindness is now mainly a relative conception. The control of blindness can also only be relative since much blindness is inevitable in spite of all treatment and only a small percentage of the blind may have vision restored.

It is not generally realized by the sighted that the blind are usually not just normal persons deprived of their vision. Their disability often renders them neurotic and frustrated. They tend to become dependent and to lose ambition. Even when they are told that treatment might restore their vision they often refuse it because of fear of operation or because they would rather retain their allowance than regain vision. Most of those who refuse treatment are middle aged or older and they fear that they could not compete again for employment if their sight were to be restored. Moreover, it is well known that the longer treatment is delayed in these cases, the less chance there is of treatment being

accepted. It would be better to first exhaust the possibilities of treatment before a blindness allowance is granted.

In spite of the difficulties much has been done in the last fifty years in the prevention of blindness and in the rehabilitation of the blind. This progress has mainly occurred indirectly because of improved methods of treatment and through the efforts of organizations such as the C.N.I.B. There should be more positive action in blindness prevention by health departments and other government agencies. It is evident also that much more needs to be done before preventable blindness is reduced to a minimum and before all the blind who can become rehabilitated will be readjusted.

CAUSES OF BLINDNESS

Although some important causes of blindness are found only in the tropics the majority of the causes are similar throughout the world. They vary in incidence and importance under the influence of locality, climate, hygienic standards, national economy, development of medical and social services and the definition of blindness used.

Age Groups of the Blind

The age groups of 21,010 blind according to the C.N.I.B. (7) are as follows: From birth to 6 years, 319; 7-20 years, 1092; 21-39 years, 2875; 40-64 years, 7040; 65 and upwards, 9684.

The high incidence of blindness in middle and old age should be noted. The small number of the first group is striking. Causes include congenital defects, cataracts, injuries, infections and retrolental fibroplasia. Fifty years ago there were many more blind children. The reduction has been mainly due to the eradication of gonorrhoeal ophthalmia neonatorum by the universal practice of instilling 1% silver nitrate drops into the eyes of new-born infants. This is the Credé method and it is still the best (8).

Retrolental fibroplasia first described fourteen years ago threatened to markedly increase blindness in children. It occurred in premature incubator babies a few weeks after birth from abnormal development of retinal arteries. By 1952 some 6000 cases appeared sporadically, mostly in the United States, but also elsewhere, including 200 in Canada. After much research in many countries British workers discovered several years ago that the precipitating cause was concentration of oxygen in the incubator in excess of 40% (9, 10, 11, 12, 13). Now with proper oxygen restriction new cases do not occur. This dramatic incident in medical history illustrates the value of proper research.

At present nothing can be done to prevent blindness due to congenital defects except in the case of those cataracts which develop in infants' eyes if the pregnant mother contracts rubella in the early months of pregnancy. This could be used as an argument to expose all girls to rubella in childhood. Some authorities advise termination of pregnancy if rubella is contracted in the first three months.

Congenital cataracts should be removed before age six, but the vision is often not improved because of the frequent presence of other defects.

The main causes of blindness in the 7 to 20 year group are injuries, infections, hereditary diseases (retinitis pigmentosa and luetic interstitial keratitis). Nothing can be done for retinitis pigmentosa, but luetic interstitial keratitis responds well to cortisone.

Most of the previous causes carry over into the group between 21 to 39 years. However, there is an increase in incidence of blindness due to injuries, infections and degenerative myopia.

In the blind between 40 and 64 years of age, previously noted causes continue to have their effect. The sharp increase of blindness in this group is due mainly to glaucoma, cataract, disease of the uveal tract (iris, ciliary body and choroid), optic atrophy, diabetes, nephritis, tuberculosis, hypertension, and diseases of the central nervous system.

There has been a reduction in blindness in all age groups where the condition is amenable to treatment by sulphonamides, antibiotics, cortisone and ACTH. Diseases of the uveal tract and virus eye diseases are often resistant to treatment but hypertension as it affects the eyes can now often be treated effectively either by the operation of sympathectomy or by the use of the newer blood pressure lowering drugs. Blindness as a complication of diabetes is on the increase as many diabetics develop cataract or retinitis or both after fifteen years or so. Before the advent of insulin few diabetics lived long enough to develop these eye complications.

Glaucoma is our biggest eye problem in the prevention of blindness. It is common after age forty and is increasing in incidence. Early diagnosis and treatment can preserve vision. Unfortunately, the symptoms of the common chronic type only develop after the disease is well established. Everyone over forty should have regular eye examinations by an eye doctor to rule out glaucoma which causes 11% of blindness.

There are 9684 blind in the group of 65 years and upward. The causes carry over from previous groups with the addition of degenerations associated with old age. We are beginning to reach a stage where blindness due to infections, especially in the young, can be largely prevented. However, blindness in old age is on the increase. This trend will continue as much of the blindness in old age is inevitable and more people are living longer.

Surgery

Senile cataracts which cause about 20% of all blindness begin to become common after age 50, and the incidence increases after age 65. The blind in this group have the best chance for restoration of vision. The only treatment is by operation. Age is no barrier and in uncomplicated cases good vision with glasses can be expected in over 90% of cases.

Corneal transplantation promises to restore vision in selected cases of corneal opacity and in conical cornea. A main difficulty is to obtain donor eyes. An Eye Bank has been started in Toronto by the C.N.I.B. In the New York Eye Bank which has been in operation for ten years, most of the donor eyes are being secured at time of death from persons who had previously indicated that they would give their eyes to restore vision to others.

Retinal detachments can often be repaired with restoration of vision if

treated soon enough. Neuro-surgery for the removal of pituitary and other tumours can save life and sometimes preserve vision. Too often this has already been lost and the surgery only prolongs life, leaving the patient blind. There are many other eye conditions amenable to surgery which cannot be dealt with in this article.

Eye Injuries

Too many blinding eye injuries still occur in young people and in industry mainly as a result of carelessness. Industry is learning that workers' eyes must be protected. The use of goggles and other protective devices is obligatory in some occupations and should be more general where there are industrial eye hazards. Most of the unnecessary industrial eye injuries now occur in small shops with poor safety practices, or in self employed workers who neglect to wear goggles or to take other necessary precautions.

BLINDNESS CONTROL DIVISION

One of the main duties of the Blindness Control Division has been to arrange for the eye examinations of applicants and recipients of blindness allowance, and to review eye reports and issue blindness certificates to the provincial authorities. Until recently, aside from its educational campaign, the division has only been able to exert a limited effect on the control of blindness. This is because public health treatment is essentially a provincial responsibility. However, since 1948 the division has been able to assist in the control of blindness in a more practical manner. In that year the division commenced a treatment experiment designed to show that a considerable number of blind pensioners could have vision restored by treatment, mostly by cataract extraction. The experiment was successful and in 1952 the treatment scheme was put on a permanent basis. Now nine provinces are cooperating. Of 285 cases treated, sight was restored in 210 at an average cost of one year's blindness allowance. Treatment is offered to all suitable recipients of blindness allowance. However, for psychological and economic reasons less than half of those who could benefit agree to undergo treatment. Applications for treatment should be made to the Blindness Allowance authority, Department of Welfare at the Parliament Buildings of the capital of the province concerned, except Alberta which does not participate. Permission must be received from the provincial authority before treatment is started if accounts are to be paid. The patient has choice of oculist. Provision is made to pay the oculist's fee, the hospital expenses including semi-private bed and special nurses, post operative eye glasses and transportation costs of the patient. If sight is restored, the blindness allowance is not stopped until at least three months have elapsed. At present about 8500 persons are in receipt of blindness allowances of up to \$40 per month, with some provinces giving additional benefits. There are means and residence tests and the age limits are from 18 to 70 years. After age 70 the blindness allowance is stopped and the recipient is transferred to Old Age Security of \$40 per month. Both allowances are not payable at the same time. The scheme does not provide treatment to restore vision after age 70.

Another way in which the Blindness Control Division is helping to prevent and control blindness is through its interest in glaucoma clinics financed by the National Health Grants Program. In 1950, clinics were set up in Toronto, Montreal (2 clinics), and Quebec City. In 1955 a clinic commenced in Saint John, N.B., and in 1956 clinics were started in London, Ontario, Ottawa and in Vancouver, B.C. Plans for others are being discussed. There is need for a glaucoma clinic in every large centre as much glaucoma is now being undiagnosed and untreated. In Europe the incidence of glaucoma is assumed to be 0.3% (14). In Canada we think the figure is higher but not as high as in the United States where surveys of thousands of industrial workers over age 40 indicate an incidence of 1.53% (15).

EYE RESEARCH

The Blindness Control Division is also interested in eye research, which in Canada is mainly carried out with the aid of the National Health Grants Program. Research projects are under way at the Banting Institute concerning virus eye diseases, uveitis, corneal transplantation and adult glaucoma. Infantile glaucoma is being investigated at the Hospital for Sick Children, Toronto, and also projects have been carried on there concerning strabismus and the screening of school children's vision. In Alberta, rural school children's vision has been surveyed for the past several years. At the University of Ottawa, projects concerning the lens, corneal transplantation and the effects of drugs on the eyes are being carried out.

There will always be considerable blindness, particularly in old age. It is possible, however, to do much more than is now being done to control and prevent blindness. This is not only the responsibility of doctors, health and welfare officials and governments, but of the general public who should be more concerned with obtaining immediate investigation and treatment when any sign of eye trouble develops.

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Flood Disasters and Public Health¹

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PEACE-TIME calamities of devastating floods are among our great disasters which create immediate problems of public health. Contrasting situations will be described briefly for illustrative purposes. Twenty-nine years and one month ago was my first experience in attempting to cope with flood and tornado in Arkansas areas, where the conveniences were lacking of a city water supply, sewerage system, central mess halls, spacious buildings and recreation fields to contribute to the comforts of the refugees—facilities that were shown to us in Memphis, Tennessee, on our way to the emergency (1).

The territory of the flood area was at least 200,000 square miles. In Arkansas, 4,000,000 acres were covered on May 18, 1927. Fifteen feet of water filled the streets of some towns; many houses were destroyed or washed away; while sometimes the water reached the second storey. A score of rivers besides the Mississippi contributed to this problem.

Thousands of families were quartered in concentration camps, in tents supplied by the Army, and in railroad box cars. The emergency program included a drive against three diseases—typhoid fever, epidemic diarrhoea, and malaria. For the care of acute sickness, hospitals were utilized as widely as possible. It was necessary to hold regular sick calls in concentration camps and to establish emergency hospitals, particularly to facilitate the isolation of communicable disease cases. Special medical and nursing care was given to maternity cases. Noteworthy were rescue and rehabilitation services of the Army and Navy, and of other governmental and voluntary agencies, including railroads, telephone and telegraph companies.

The coordinated emergency program of the Red Cross embraced medical, nursing and sanitary services. Throughout the period of the refugee camp, 600,000 people were given complete care. Then followed a 30-day clean-up period, with return of refugees to their homes with free rations and medical service for two weeks. During nine weeks, as a result of the coordinated program developed with state and federal health officials, county medical societies, and health departments from 14 states outside the flood area, 560,000 people were immunized against typhoid fever and 161,000 against smallpox. There were no epidemics and the incidence of disease was less than that expected in a normal group.

The Red Cross employed 100 physicians (in addition to 200 donating their services), and the services of 35 health officers and sanitarians in addition to 80 donated by various states to the Red Cross, which paid expenses. About 30

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specialists were supplied by the U.S. Public Health Service. One hundred and fifty-eight Red Cross public health nurses gave valuable services. Two tons of quinine for malaria prophylaxis, 200,000 gallons of spray oil for mosquito control, and 100,000 pounds of chloride of lime were supplied, while a program was instituted for screening of 15,000 malaria cases.

Later came World War II, with disasters requiring the application of some of the same measures used in these flood areas, especially for liberated and occupied territories (2). The important problems of public health could be grouped as communicable disease control, medical services, sanitary engineering, medical supply and nutrition. In addition, problems related to refugees and to veterinary services were encountered. Too much emphasis can hardly be given to the importance of experienced supply personnel, to problems of communication and transportation. One of the most difficult problems was to strike a happy balance between the many well meaning, enthusiastic and generous individuals and organizations desiring to assist, the wishes of the people and areas concerned and the demands of administration necessity.

A recent article by a sanitary engineer on flood protection and rehabilitation gives practical advice on planning for emergencies in dairy and food industries (3). The author states that "flood disaster can generally be predicted with relative accuracy both as to frequency and severity. But the experience in the northeastern United States on last August 18 should be warning enough. On that day a 30,000 square mile area in New York, New Jersey, and Pennsylvania was deluged by 14 inches of rainfall in less than a day. United States Weather Bureau officials had predicted there would be some rain when moisture air currents of hurricane Diane moved in on the hot humid air already in the area, but the amounts that fell were beyond predictions. As a result the flood came with no warning for most of the communities afflicted." There were problems of dykes, water supply, electric and gas utilities, steam plants, industrial plant equipment, sewage and waste treatment. There were problems relating to emergency supplies: "Keep a generous inventory of insecticides, chlorine compounds, detergents, and other cleaning supplies safe from flooding".

The steps suggested in emergency planning to meet flood disasters are to confer with governmental agencies involved in flood control work, to learn the condition of processing plants and critical utilities and to prepare an effective disaster plan.

In planning, it is necessary to bear in mind that, as Phair, Brown, and Nichols have pointed out (4), trained and skilled public health personnel are at a premium. Further, we have no reason to believe that shortages which now exist will not continue to exist, at least for some time to come. Everything possible, therefore, should be done to use more effectively the available staff. This applies in all disaster planning.

The importance of the service of properly equipped volunteers and other persons is illustrated by what members of the Boy Scouts did during the floods. For example, one swam from the second floor of his house and reported to a hospital where he manned a field radio. Another waded from house to house supplying his neighbours with food and another ran a field kitchen that fed his marooned community for nine days.

What had happened? The flood swept down under cover of darkness on August 19 and 20 after the rush of hurricane Diane. The waters struck without warning, adding to their terror and destruction. Hundreds of communities were staggered or knocked out. Measured in dollars, the damages totalled a billion and a half according to one estimate. More than money, the toll included more than 250 dead, 20,000 homes damaged or destroyed, hundreds of factories wrecked, merchandise in thousands of stores spoiled, and countless acres of farm lands ruined. Destruction of roads, bridges, railroads, of power, water, and sewer lines isolated families and whole communities. Health was endangered. Survival depended on primitive means, as in the wake of California's pre-Christmas devastating floods. A notable aspect of the emergency manpower situation was the immediate application of the principle of mutual assistance (5).

More specifically, in Connecticut, plans for emergencies prepared earlier were applied with common sense and flexibility. Many agencies, organizations and individuals cooperated. In 1935 the State Department of Health established a disaster relief committee which suggested procedures to be applied in an emergency. These were sent in mimeographed letters to local directors of health in the 1936 and 1938 disasters.

In April, 1938, a Disaster Relief Committee of the State and Provincial Health Authorities of North America made a report on this subject. The committee had as consultants the Surgeon General, representatives of the Red Cross, the Pullman Company and the Metropolitan Life Insurance Company. The report dealt largely with peace-time disasters, but included some reference to preventive measures in time of military operations. It was amended in 1939 and again in 1949. Connecticut procedures were supplemented from this course.

A state disaster manual was prepared in 1941. During the years of World War II, the Connecticut State Department of Health cooperated actively with state civil defense officials, incorporating into their publications many of the provisions of the state disaster manual. Subsequently, periodic revisions of the state manual were made at intervals of two to five years. The manual in use at the time of the Connecticut floods was dated November, 1954. The latest edition is dated January, 1956.

Floods and tidal waves are often listed first among types of disasters, followed by fires, hurricanes and tornadoes, explosions, droughts (including public water supply failures), disease outbreaks, earthquakes, military operations and major accidents. Some are statewide and some are local in significance. Needed health protection involves such features as:

1. Protection of public and private water supplies.
2. Sanitation of milk and other foods.
3. Sanitary control of the immediate area (with disposal of dead human bodies, including identification, etc., and disposal of dead animals and of excreta and other wastes).
4. Control of communicable diseases.
5. Sanitation of facilities for shelter.
6. Care of the sick and disabled persons, including special groups, such as the old, young, handicapped and pregnant women.
 - a. Provision of medical and nursing personnel.
 - b. Provision of medical and sanitary and other essential supplies.
 - c. Provision of hospital and first aid facilities.

It is essential that advanced lists of persons to call be prepared in advance and periodically reviewed and the location of stock piles of materials be wisely located for accessibility. When disaster occurs, for example, a state department of health may have to send out immediately notifications concerning hazards to health depending on the type of disaster, to the following: The Governor, Local directors of health, Office of Civil Defense, State Police, American Red Cross, U.S. Public Health Service and Military Companies.

FLOOD CONTROL IN CONNECTICUT

One of the 13 original colonies, Connecticut ranks 28th in population (2,271,000 est.) and 46th in area among states of the United States. Roughly rectangular in shape, the state is 90 miles long and 55 miles wide. The shore line is 110 miles long. Each of three main divisions of the state has its own drainage system. There are good transportation facilities. Approximately 1000 square miles or 20% of the state's area was affected by the flash flood.

Fatalities were excessive, but casualties requiring major treatment were low. A total of 87 persons lost their lives in the flash flood emergency. Most of the bodies were recovered and identified; but 12 were still missing on September 15, 1955. On September 19, thirty days after the flood, the New Haven Railroad summed up its damage and recovery, observing that thirty-eight bridges and trestles were destroyed, and 70 miles of track were obliterated by 98 washouts and 12 landslides. Of 970,000 telephones in the state, 85,000 were out of service on August 19 as a result of the flash flood. A total of 39 towns had some degree of interruption. Seventy-eight of 169 towns suffered interruption of the electric power service of which 25 had complete interruption. Gas service was interrupted in 16 towns of this state in which 77% of the people reside in urban areas. Some of the balance of the story may be told in diary form, as taken from the Connecticut State Department of Health Bulletin, issued following these experiences.

FRIDAY, AUGUST 19

Weather—a heavy rainstorm moving inland over Connecticut toward the East caused the first damage at 2:00 a.m. in Torrington. The storm continued its slow path across the state with weather gradually clearing around noon. Twenty-four hour rainfall recorded at U.S. Weather Bureau Station, Windsor Locks, an all-time Connecticut record of 9.41 inches. Health work was hampered by the physical damage which caused serious disruption of customary communications and nearly complete isolation of the state into areas. Transportation was seriously affected.

Emergency Mobilization—In accordance with an alert plan set up August 16th, the Connecticut State Department of Health staff was mobilized for 24-hour duty on an emergency basis at 5:40 a.m. At that time flash floods in Litchfield and Torrington were the only damage known to the department headquarters in Hartford. In rapid succession flood damage in Waterbury, then on down the Naugatuck River Valley, the Farmington River drainage area, Stafford Springs, Enfield, the Putnam area, and Norwich was reported.

As a precautionary measure the department advised all public water supply

officials to increase chlorine residuals on their water-supply systems to offset the effects of the heavy runoff. At the same time the press, radio and television stations were disseminating public information on disinfecting water, precautions about food, and advice on cleaning affected dwellings and contents.

Department sanitary engineers were assigned immediately to the areas concerned, a physician was placed on emergency duty in Litchfield County with headquarters at the State Police Barracks, and the department coordinated its activities with those of the State Office of Civil Defense.

Department Organization and Spot Survey—Physician-nurse teams were organized for consultation service on public health problems to the stricken areas. One team succeeded in making a preliminary survey of the Putnam area. A physician was dispatched by helicopter to Torrington to cover problems of emergency medical care which the Red Cross disaster service and medical service of the OCD were not organized to meet at that time. Road conditions prevented further adequate survey work during August 19th. Health education releases for the press and news rooms of radio and television stations concerning emergency protection of drinking water and clean-up activities were issued by telephone, messenger and mail. An emergency supply of typhoid vaccine for 300,000 people was ordered to supplement vaccine already on hand in the department. Immunization kits were assembled and sterilized. The department advised that all persons who had or would have significant bodily contact with the flood waters or with materials contaminated by the flood should be offered the protection of typhoid-paratyphoid vaccine.

SATURDAY, AUGUST 20

Weather—clear, sunshiny weather aided department efforts which, however, were still hampered by disruption and overtaxing of communication and transportation. Flood crests of most streams were reached at approximately noon-time. Concurrently came reporting of additional towns along the major rivers of the state suffering flood damage from the high waters.

State of Connecticut

A PROCLAMATION

By His Excellency ABRAHAM RIBICOFF, Governor

After a conference between representatives of the Federal Food and Drug Administration, the Connecticut State Department of Health, the Connecticut Food and Drug Commission, the Federal Civil Defense Administration and the State Civil Defense Office, it has been determined that there is imminent danger to the people of Connecticut from the use of unsafe foods, drugs and cosmetics affected by flood waters.

Because of this danger, I hereby Declare a Food and Drug Embargo in effect in the State of Connecticut for all manufacturing plants, warehouses, processing establishments, retail stores and public eating places or other establishments handling food or drugs, located in areas which have flooded and whose premises have been affected by flood water or power failure.

It is further Declared that no food or drugs can be removed for any purpose from the embargoed premises until inspected and released in writing by an authorized agent of the State Food and Drug Commission.

Given under my hand and seal of the
State at the Capitol, in Hartford,
this twentieth day of August, in
the year of our Lord one thousand
nine hundred and fifty-five.

Organized Survey—An organized canvass of all towns in the state was initiated. Seven survey and consultation teams were sent to areas where public health problems were known or suspected to exist. The remainder of the state, where such communication allowed, was checked by telephone. Public information on meeting the health demands of the emergency continued to be disseminated to the press, radio and television with special effort made to reach all citizens in towns known to have damage. In cooperation with the Federal Food and Drug Administration and State agencies concerned with health matters, the department assisted in drawing up a Proclamation for the Governor which was issued (see above) placing an embargo on food, drugs and cosmetics damaged by flood water. It was administratively determined that this aspect of the health situation at the State level would be assigned to the State Food and Drug Commission to work in cooperation with local directors of health. All emergency requests for medical supplies from local directors of health received during this day were filled and transported to the desired locations. Typhoid and tetanus immunizations were done and the state department of health supplied immunization teams to stricken areas on request. In this the staff of the State Tuberculosis Commission rendered valuable assistance.

SUNDAY, AUGUST 21

Weather—warm sunshine, with slowly receding flood and river waters eased transportation conditions.

Organized Survey of State—With the assistance of local directors of health a complete canvass of the 169 towns of Connecticut was undertaken to determine possible health hazards. Aid to the stricken areas already identified was continued and intensified during the day. Emergency requests for supplies and immunization teams were all met. The survey disclosed at the end of the day that 130 towns had no major emergency public health problems, 6 towns were still under investigation and 33 towns were known to have severe local conditions presenting hazards to health.

MONDAY, AUGUST 22

Follow-up of Town Survey—Continued clear and hot weather favored plans for establishing temporary health districts with local headquarters in areas where the most severe public health problems existed. Five such districts were organized during the day and resident staff physicians, public health nurses and engineers were assigned to three of these. Meanwhile, distribution of medical supplies in response to emergency requests was continued, and the emergency distribution of large quantities of chloride of lime was begun. Immunization clinics staffed by department personnel were supplied to all areas requesting this assistance.

TUESDAY, AUGUST 23

District Organization—A sixth district was established and staffing for all districts was completed. Requests for medical supplies reached the level of a routine activity. Special consultation services were instituted on this day: assistance to all hospitals within the stricken areas, consultation to beauty

parlors licensed by the department on methods of cleaning up flood damage and the sterilization of instruments and equipment, special information on nutrition practices under adverse conditions for families and chronic and convalescent hospitals and so on.

With the reporting of a case of malaria (recurrent in a returned serviceman) from Putnam, the department's division of mosquito control was assigned to that area for work in controlling flies, mosquitoes and other nuisance insects. The department's dental trailer was converted to a mobile immunization and sterilization laboratory and dispatched for use in the Putnam area. The department's laboratory trailer used in restaurant sanitation was returned to Hartford and converted to a mobile bacteriological laboratory for possible use in any area developing evidence of an outbreak of communicable disease. Sanitary engineers and inspectors were added to the staff of the health districts for purposes of organizing and inspecting dwellings evacuated during the flood.

At the close of the fifth day it was apparent that emergency public health problems had been localized to the 23 towns covered by the 6 health districts.

WEDNESDAY, AUGUST 24

The waters now had receded from the thousands of flooded homes, stores and factories, also from the washed out roads and demolished bridges. The broken water mains and broken sewage lines, side by side, were exposed to view. Flies and rodents were in evidence in some areas. However, the cleaning up after the disaster was in full swing for unsanitary conditions.

THURSDAY, AUGUST 25

More clinics were being set up for the second injection of typhoid vaccine. Communications and transportation were almost normal except in some of the extremely hard hit areas. In each of the 6 emergency health districts there still was great demand for the services of the public health staff of physicians, sanitary engineers, public health nurses, medical social workers and health educators.

Throughout the critical period of Connecticut's worst catastrophe, the State Department of Health and local departments were offered and received immeasurable help and cooperation from numerous individuals, many of whom were flood victims, and organizations throughout the State and nation. Another lesson for planning and action is summarized in the Hawaiian proverb, "Waves of the sea are overcome by the bow of the canoe. Waves of men are overcome by human courage".

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Some Observations on Public Health in Ontario

J. P. WELLS,¹ M.D., B.A., D.P.H.

HEALTH has been defined by the World Health Organization as "a state of complete, physical, mental and social well-being, and not merely the absence of disease or infirmity". The adequacy of the contribution of public health to the general health program of the world community is dependent on the maximum achievement in each country at the national, state, and local levels. With this definition in mind, the minimum acceptable administrative requirements which are essential to the success of a public health program are an optimum program, fully acceptable to the public, province-wide in application, and conducted by a sufficient number of adequately trained personnel.

An Optimum Program

If we accept this definition of health then we must be prepared in our administrative activities to cope with the problems encountered in the broad and unexplored field of social medicine. Definition of its final objective is, of course, impossible. Recognizing this, we should however have an immediate, temporary objective to be used as a jumping-off point for our next endeavour. The recently published report of the study by Phair, Brown and Nichols of the activities of health department staffs in 1953, in 15 of the 41 local full-time health departments in Ontario, is a contribution of great interest and value. It makes, however, no attempt to compare program offerings with program requirements or to assess the quality of the work done. Such assessments and comparisons require standards which we do not now possess and this lack we must rectify as soon as possible with yardsticks both adjustable and expendable. We should first know what needs to be done before attempting to establish the number and qualifications of those required to do the work. Our dual roles as law enforcement officer and director of non-statutory health services places us in a difficult position. Much of the legislation we are required to administer—the Public Health Act and Regulations—stands in need of revision. The lines between jurisdictions of health and other administrations must be more clearly drawn and specific and practical provisions must be made to cover matters of interest shared by us with others. Regarding the definition of our non-statutory activities there is little agreement among us, either in the offices of the provincial health department or in the field. In meeting the daily demands of our administrative duties, few of us at either level find time for study which is essential to the development of programs. I would like however to suggest as one method of attacking the problem the appointment of a permanent "public health advisory council" to advise the Minister of Health. Its function would be to study from year to year, the

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statutory functions and to determine also the nature and scope of our non-statutory functions. There are probably other methods which might accomplish this which would be more practical than the one proposed. This is however pressing business! Let us neither delay in finding the right way nor postpone its application when we have found it!

A program fully acceptable to the public

Good public relations and effective administration are intimately related and separation of one from the other is extremely difficult. We in the public health field have carried the banner of "education and persuasion, but no coercion". We have hoped through discussion with an informed public that we could meet our responsibilities of safeguarding and advancing health. When, in disillusionment we have resorted to sterner measures, we have frequently failed because we lacked an adequately informed public and their support. Such lack is sometimes aggravated by the obstructive action of politicians of a certain kind and by the resentment of some barristers and magistrates who feel that we are usurping the function of judge and jury. We are all proud of Ontario's prosperity and the progressiveness of our people. Yet we have little cause for complacency in the fact that 2,000,000 persons in our province have not yet provided themselves with the protection of full-time health services. This situation, complicated by the shifts in population and the annexations of suburban areas to large urban centres, constantly presents new administrative problems to the full-time health officer and defies the efforts of the health educationist at the local level to gain public support for the enforcement of statutory requirements and to utilize the available non-statutory services. The work of the voluntary health agency has been invaluable in the education of the public, chiefly in respect to non-statutory services, although they have helped in promoting popular support for statutory obligations.

In referring to voluntary health agencies it is fitting to pay tribute to the Health League of Canada in recognition of the service rendered as a health information and health promoting agency, both directly and through its co-operation with other health organizations. In regard to voluntary health agencies we might think of having some day, one national non-professional voluntary health agency comprised of as many sections as are needed to include the work of each of the lay groups now identified with a particular field. Some day too, the Health League of Canada may have a complete chain of local branches across the Dominion. Voluntary health agencies have a tremendous potential for the advancement of health services.

In its public health education program the Department of Health of Ontario appears from a review of its official activities to have confined its efforts to making films and pamphlets available to the public. The material is in general excellent and the division of public health education merits our thanks. But, from the standpoint of local administration, the program is inadequate. It lacks what is necessary to develop and maintain an informed public in respect to official health legislation and to impress the public with the fact that the Ontario Public Health Act is a law applicable throughout the province, and to win wide acceptance of the statutory functions of the local health department.

Only a few years ago an officer of the Ontario Department of Health had to remind the chairman of a local board of health in the author's presence that his county was part of this province. Until this situation is corrected through education, municipal councils and local boards and medical officers of health will continue "to take or leave" the enforcement of requirements under the revised statutes of Ontario as they see fit. Until then, politicians will continue to consider the local health department budget the first to be curtailed in the interest of lower tax rates.

Province-Wide Application

Large sections of our province, mostly rural, have failed to accept full-time health services. It is common knowledge that much of the responsibility for this situation may be laid at the door of our taxation system, which places the burden of local levies, including the costs of health services, on the property owners. Our educational efforts have not been effective; nor has the offer, in the past ten years, of the full-time health unit plan, wherein participating municipalities receive provincial grants, been completely successful. Another plan, devised as an incentive to rural areas to establish full-time health services, attempted to achieve this by allowing only health units to be eligible to benefit from National Health grants. This restriction was discontinued a few years ago. A third of our population in Ontario is receiving the services of a medical officer of health only on a part-time basis. The part-time medical health officer is usually without special qualifications in public health. He is assisted by a sanitary inspector who serves often only part-time and who is often lacking in training. Occasionally such a part-time department has a public health nurse or nurses engaged in a generalized or school health program. The remuneration of a part-time medical officer of health is only a token amount; his time is fully occupied by the demands of his private practice and his official interest in community health is further discouraged by his status as a private physician. However, in the face of these disadvantages, some part-time medical officers of health give their communities far greater service than might reasonably be expected. But even in these communities the requirements under the Public Health Act are practically unknown and the non-statutory services are almost non-existent. As a result of the changes in population distribution and the annexation in urban municipalities of suburban communities, is it any wonder that there are people in municipalities, long in possession of full-time health services, who resent the medical officer's attempt to enforce the Public Health Act. The health standards in these municipalities depend on the actual effort of the full-time medical officer, the support which he receives locally and at the provincial level, and, in the final analysis, on his success in meeting opposition. Accordingly it is doubtful if any other section of the Revised Statutes of Ontario find such variable application in the province as does the Public Health Act. And, while we must recognize that absolute uniformity in standards is both impossible and impracticable, nevertheless a new approach is required if the much needed province-wide program is to be realized. With this in mind consideration should be given to the suggestion, as an initial step, of statutory provision for the creation in all communities of directly elected and fully

autonomous local boards of health, employing qualified full-time medical officers of health, public health nurses and sanitary inspectors. The appropriate grouping of smaller counties and municipalities into units suitable for this purpose is essential, together with assistance to them in meeting the costs by generous provincial grants.

Sufficient adequately trained personnel

Our final administrative consideration concerns personnel qualifications and availability. Adequate training is recognized as essential for all public health personnel. Courses in post-graduate schools of hygiene, in schools of nursing, and in institutes of technology should be considered by us in respect to adequacy and constructive observations made in the light of our experiences. These observations, I believe, would be welcomed. In Ontario, the Department of Health has established a training course for sanitary officers extending over an academic year, combining academic and laboratory instruction with field training. This course has replaced the correspondence course in Ontario as provided by the Canadian Public Health Association. Our thanks are due to the Association for its splendid work during the past twenty years in establishing qualifications, providing a correspondence training course and the holding of examinations. The course in Ontario supplements the Association's program. We can be very helpful in offering suggestions in regard to the content of training courses in order that they may be as practical and as effective as possible. Regarding the post-graduate course for physicians leading to the diploma in public health I would suggest that opportunity be provided for specialization in certain fields. To this end, instruction in the first term might be general for all students and during the second term the opportunity for specializing might be provided. Such an arrangement has been in operation in the University of Michigan for some time, and I believe the suggestion merits consideration. In the teaching of public health administration, more opportunity should be given for discussion of the effectiveness of various procedures and regulations, to clarify their purpose and to indicate possible weaknesses.

And now the question of salaries poses one of the important administrative problems. Present salary levels are undermining the structure and jeopardizing the future of our whole public health program in Canada. The reports of our Canadian Public Health Association's Committee on Salaries and Qualifications of public health personnel published in 1947-1949-1952 have clearly warned of the danger, although accompanying its warnings with most conservative recommendations with respect to increases. The warning has been heeded and the recommendations fairly well implemented with respect to the salaries of public health nursing and sanitary inspection personnel; even though this involved granting proportionately more liberal increases to these sections than to physicians, dentists and veterinarians. There has been a continuous shortage of qualified public health personnel in Canada for many years, which should long ago have stimulated a practical approach to the problem. One reason why nurses and sanitary inspectors have received more adequate remuneration is found in the support given by the Registered Nurses Association of Ontario (now recommending \$3,000.00 per annum for a qualified but inexperienced

public health nurse) and the Canadian Institute of Sanitary Inspectors. We have been able to persuade local boards to approve higher salaries for public health nurses and sanitary inspectors because the amounts involved in the increases were moderate, but have not succeeded in obtaining proportionate increases for other personnel. Our physicians, dentists and veterinarians have received little support for adequate salaries from their professional associations. Federal and provincial authorities have been reluctant to increase salaries of physicians, dentists and veterinarians employed as civil servants because such adjustments would necessitate an upward revision of the whole civil service schedule. Salaries which are approved in the National Health grants program reflect this reluctance, and these salary approvals have provided local boards of health with good indications of the amounts that they might offer their personnel. National health grants may be credited with affecting the attainment of desirable basic salaries for public health nurses and sanitary inspectors thereby assisting in the recruitment of personnel. On the other hand they may be charged with the responsibility for maintaining a low level of salaries for our physicians, dentists and veterinarians and in consequence a shortage of personnel. A member of the Ontario Department of Health recently expressed the opinion that the average salary received by a qualified health officer in Ontario is approximately \$7,000.00. If the average experience of our health officers is even 3 years and we know it is much more, \$7,000.00 would be approximately \$6,000.00 in terms of basic salary. What is our hope then of "a salary comparable to that obtainable in professional positions with similar responsibility and private enterprise in the same region" as stated in the salary survey recommendations of the Canadian Public Health Association. An income of \$7,000.00 might interest a practitioner contemplating semi-retirement on account of old age or illness to accept such an appointment. It offers no inducement to a keen young graduate in medicine, who might otherwise be interested in a career in public health. In our work as public servants, we do not expect to receive incomes comparable with those obtainable in private enterprise, but the average figure of \$7,000.00 should be raised to \$10,000.00, with similarly appropriate increases for dentists and veterinarians. If this were achieved, professional recruitment so essential to the success of public health would be much more successful.

DISCUSSION

Dr. Peter Wenger, D.P.H., Director of Fort William and District Health Unit, Ontario. "Dr. Wells spoke of us as being in the business of public health and showed that the essential minimal requirements in public health were very much the same as the essential minimal requirements of business. He mentioned that a business can get along, at least for a time, without adequate office facilities. But a business which hopes to grow and develop must provide itself with a display window and have adequate accommodation for its goods and its staff. The same applies in public health, and one of the minimum requirements is the provision of an adequate office. Too many public health offices are located in dingy, run-down buildings or in basements. A layman visiting such an office is apt to leave with a poor opinion of public health and the staff.

When the Fort William and District Health Unit commenced its work in 1952, only inadequate quarters were available. However, the next year we moved into a new building, 75 \times 100 feet, known as the Health Centre building. It is an extension of our general hospital. In this building are housed the health unit offices, the V.O.N., Society for Crippled Children, the Red Cross Society, the office of the Provincial Sanitary Inspector and a branch of the Provincial Health Laboratories. The building is connected to the hospital by a tunnel. I believe our building is unique in Canada since it combines public health and allied agencies, the provincial health laboratory and the General Hospital. We are proud of our quarters and know that they have contributed already to the dignity and respect of public health.

"I rather like Dr. Wells' idea of a 'public health advisory council' to the Minister of Health. His suggestion that Boards of Health should be elected like Boards of Education is one that I am afraid the voters would not accept. I do not feel that the present method of appointing members to the boards of health is unsatisfactory. It is that a Medical Officer of Health has no choice as to who is appointed to the Board. It depends on the Medical Officer of Health to make a Board successful. To accomplish this he must make the Board feel that it is part of the public health team and not a rubber stamp. He must make his monthly meetings interesting so that Board members will look forward to attending. It is unnecessary to say that a good Board is a decided asset to a Medical Officer of Health."

Dr. D. G. H. MacDonald, D.P.H., Director, Peel County Health Unit, Brampton, Ontario. "Administration means different things to different persons. We might say good public health administration means efficient use of personnel and material in accomplishing various acceptable public health objectives. Administration is good when the staff work as a team. As Dr. Wells has said, a book of rules, both for statutory and non-statutory health services is most desirable. The discharge of his dual responsibilities as health officer, namely police statutory regulations and the forwarding of non-statutory services results in the health office leading a Dr. Jekyll and Mr. Hyde existence.

"A provincial public health advisory council composed of a group of unprejudiced, non-partisan experts, able to appreciate the merits of various disciplines in public health as an adviser to the department of health might be very helpful in formulating practical, realistic programs. This group might also achieve a balance among the various groups desiring a place in the sun of public health activities. There is also an active research group to determine the value and efficiency of the various procedures and techniques which we now employ or propose employing."

Placenta as Tissue Culture for Virus Propagation¹

J. C. WILT, M.D., F. J. STANFIELD, A.I.M.L.T., AND L. LEINDL

MANY tissues from both animal and human sources have been employed for *in vitro* propagation of different viruses. Monkey kidney cells and a strain of malignant human epithelial cells (HeLa) have been used most extensively as tissue culture, particularly for propagation of the poliomyelitis viruses. Three major factors determine the selection of a tissue culture for virus propagation; the first is susceptibility of the cells to as many different viruses as possible, the second is availability of the tissue at regular intervals and the third factor being the adaptability of the tissue to the *in vitro* methods which must be used on a fairly large scale.

Monkey kidney cells and HeLa cells entail the use of two different procedures; the monkey kidney cell system necessitates the maintenance of a fairly large colony of monkeys which are expensive and relatively difficult to handle. After removal, the kidneys are treated to obtain a uniform cell suspension and are then distributed to roller tubes to be used for the virus tests. HeLa cells on the other hand can be maintained as stock cultures in bottles and distributed to roller tubes for virus tests as required. The advantages of the HeLa cell system seem obvious; it eliminates the maintenance of a large monkey colony. The maintenance of these stock cultures however presents some problems; probably the most feared complication is the contamination by antibiotic resistant bacteria and fungi; it requires weeks to rebuild stock cultures following a widespread contamination. This complication can however be minimized by maintaining at least three separate lines of cells. Virus resistant HeLa cells have developed in some laboratories (1); if this resistance becomes widespread it would prevent the use of HeLa cells in virus work. A number of comparisons of the susceptibility of HeLa cells and monkey kidney cells to different viruses have been made. They are generally susceptible to the same viruses; some workers have found that monkey kidney cells are more sensitive to lower concentrations of some viruses. It has been suggested however that these workers may have been using a relatively resistant strain of HeLa cells. Despite these disadvantages of the HeLa cell system it would seem that these cells are technically more feasible than monkey kidney cells, particularly for the smaller laboratories.

The type of work to be carried out also has a bearing on the selection of a tissue culture; for quantitative serum antibody studies any cell system may be used providing that the cells are susceptible to the standard virus used; this

¹Contribution from the Department of Bacteriology and Immunology, University of Manitoba and the Department of Bacteriology, Winnipeg General Hospital.

can be readily determined. The percentage of isolations of unknown viruses from clinical specimens however depends primarily on the number of different viruses that will produce a cytopathogenic effect on the tissue culture used, on inoculation into that tissue culture in a low concentration. In general the same viruses, i.e. poliomyelitis, herpes simplex, the adenoidal-pharyngeal-conjunctival group, some types of Cocksackie virus and vaccinia virus produce a cytopathogenic effect on many tissue cultures. The best tissue culture therefore would be the one showing the most obvious cytopathogenic effects when inoculated with the lowest concentration of these viruses. Many other viruses have not produced a cytopathogenic effect on any tissue culture used, i.e. infectious hepatitis, (1) (2) homologous serum jaundice, some types of Cocksackie virus (3) and the common cold virus. Failure to isolate virus from a clinical specimen does not therefore exclude the possibility of a virus being present: it is probable that such a failure more often means that a susceptible cell system was not provided for virus multiplication.

One of the possible lines of improvement in virus diagnostic work, particularly for virus isolations, is in the development of a tissue culture susceptible to a broader range of viruses in low concentration and more adaptable to in vitro methods. Towards this end a number of different tissue cultures such as human kidney obtained at autopsy, embryonic human tissues from miscarriages, pleomorphic cell mouse sarcoma, 37, a strain of malignant epithelial cells derived from lung (Maben cells) (4), and placenta have been investigated in this laboratory. With our particular laboratory arrangements and facilities, amnion cells derived from placenta have a good deal to offer as a satisfactory tissue culture for virus propagation. The use of amnion cells in the propagation of poliomyelitis virus has been reported by Zitcer et al. in 1955 (5).

PROCEDURE

The placenta is collected from the case room immediately after delivery in a sterile covered basin and transferred directly to the laboratory. The contamination of the tissue with disinfectants is to be avoided. The amnion is readily stripped from the chorion with two pairs of sterile forceps and is washed repeatedly in Hanks balanced salt solution containing antibiotics until all excess blood is removed; this usually requires six to eight washings. It is then transferred to a 250 ml. Erlenmeyer flask and is minced with scissors. One hundred ml. of 0.25 per cent trypsin is added and the fragments are stirred on a magnetic mixer for 20 minutes. The flask is allowed to stand for one minute and the supernatant fluid is removed and discarded; this is repeated. The fluid from subsequent trypsinizations is saved in 50 ml. centrifuge tubes stored in ice water until trypsinization is complete. The number of trypsinizations varies with the number of cells required. Five or six trypsinizations will usually provide enough cells for 250-300 roller tubes. The cells are sedimented from the trypsin solution in the centrifuge tubes by centrifuging at 1000 r.p.m. for 10 minutes and the supernatant is discarded. The cells are "washed" twice in Hanks balanced salt solution containing antibiotics; after each washing they are centrifuged at 1000 r.p.m. for 10 minutes to sediment the cells. After the final removal of Hanks balanced salt solution, propagating media (60 parts Hanks balanced salt solution, 20 parts human serum and 20 parts tryptose phosphate broth) (6) is added, the cells are pooled and dispensed into roller tubes. The volume of propagating media added determines the concentration of cells dispensed; this volume is best determined by measurement of the volume of washed cells in the bottom of the graduated centrifuge tube. This may also be determined by adding a known volume of propagating media and carrying out a cell count with a hemocytometer. The necessary amount of propagating media is then added to give the required cells per ml. The propagating media is changed on the fourth day and the cells are usually ready for inoculation on the seventh day after dispensing. The tubes are placed in the "roller drum" 48 hours after dispensing and rotated at 15 revolutions per hour until ready for use.

DISCUSSION

Placenta is a readily available source of tissue culture to laboratories in the vicinity of a maternity unit; it is obtained in a relatively germ free condition. If the maternity unit is of moderate size it is usually possible to obtain the placenta during the morning of the desired day so that part of the morning and all of the afternoon are available for processing the tissue. These are all highly desirable features.

Amnion cells derived from placenta are as adaptable to *in vitro* methods as monkey kidney or HeLa cells. They tolerate trypsinization well and yield a good single cell suspension. Providing the number of cells dispensed to each tube is sufficiently heavy there is a relatively short lag phase and the cells are ready for use in 6-7 days. Human serum or horse serum may be used in the propagating media; if horse serum is readily available it reduces the expense substantially. Since serum from some horses however is toxic to amnion cells each batch must be tested before routine use.

The microscopic appearance of the cells during the first 3-4 days after dispensing to tubes is disappointing; cells should be evenly dispersed on the tube and are seen as round, dark, refractile spheres, 10-15 microns in diameter. About the third day they begin to process, one to three processes extending from each cell; the cells enlarge, but at this stage vary in size a great deal from 15×20 microns to 30×60 microns. The cytoplasm contains numerous fine granules, evenly dispersed throughout the cytoplasm in most cells, but concentrated around the nucleus in a few. The nucleus is centrally located, round, clear and 7-8 microns in diameter. A central round nucleolus is seen in each nucleus. An occasional round refractile amorphous cell is seen, which presumably represents a degenerated cell that has not divided. The number of these degenerated cells vary in different preparations but are generally much fewer when thinner cell suspensions are dispensed. Some of these microscopic features can be seen with low power microscopy of the cells on the tube. Cells can be better examined on cover slip preparations by phase contrast or after staining with hematoxylin and eosin. Many of these details can only be seen with phase contrast.

Very evident cytopathogenic effects have been produced on amnion cells by types I, II and III poliomyelitis viruses, types I to VII adenoidal-pharyngeal-conjunctival viruses, types I to IV of the group B Cocksackie viruses and the virus of herpes simplex. A readily observable cytopathogenic effect with western equine encephalomyelitis virus or Group A Cocksackie viruses has not been produced. Comparative titrations on HeLa cells and amnion cells have been performed with the three types of poliomyelitis virus and types III and IV adenoidal-pharyngeal-conjunctival viruses. Results are listed in Table I.

The cytopathogenic effects of the three types of poliomyelitis virus and of types I to IV Group B Cocksackie viruses are similar. When the virus is inoculated in a fairly high concentration, a diffuse rounding and contraction of cells is observed; the cells become highly refractile by phase contrast microscopy and no detail can be discerned. These degenerated cells eventually slough off the tubes or cover slips completely. When poliomyelitis or Cocksackie viruses are inoculated in a lower concentration, the rounding and contraction of cells occur in foci throughout the cell sheet; this becomes diffuse in 2-3 days.

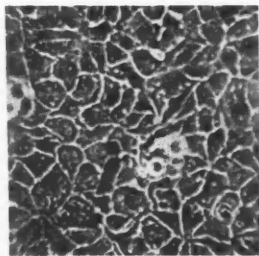


FIGURE 1.—Normal amnion cells, phase contrast, x150.

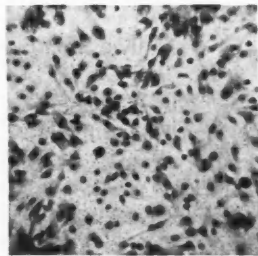


FIGURE 2.—Normal amnion cells, Stain H & E, x100.

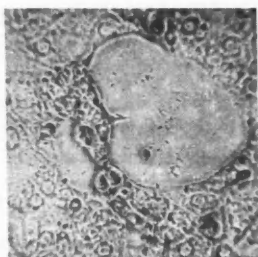


FIGURE 3.—Amnion cells infected with A.P.C. virus, phase contrast, x150.



FIGURE 4.—Amnion cells infected with A.P.C. virus, phase contrast, x300.

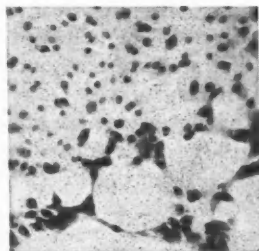


FIGURE 5.—Amnion cells infected with A.P.C. virus, Stain H & E, x100.

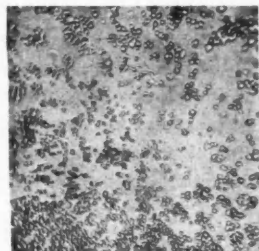


FIGURE 6.—Amnion cells infected with Polio-myelitis virus, phase contrast, x100.

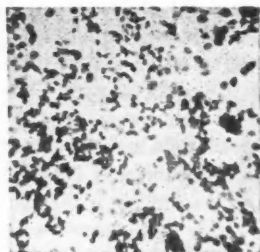


FIGURE 7.—Amnion cells infected with polio-myelitis virus, Stain H & E, x100.

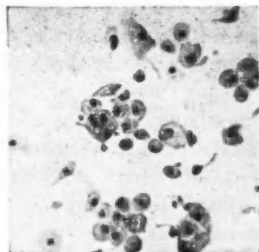


FIGURE 8.—Amnion cells infected with Herpes simplex virus, Stain H & E, x150.

The adenoidal-pharyngeal-conjunctival viruses produce a clumping of cells throughout the film; the clumps vary from 3-10 cells and sometimes occurs in linear arrangement. Cells in the clumps are rounded and refractile but not as contracted as with poliomyelitis infection. With phase contrast the intracytoplasmic granules are larger than in normal cells and are much more evident. When normal cells are infected with lower concentrations of virus the cytopathogenic effect occurs at the periphery of the cell sheet and is very slow in becoming diffuse, often requiring several days.

Herpes simplex virus produces a rounding of cells, first in foci and later throughout the cell sheet. The cells do not contract as with the poliomyelitis viruses and cell detail remains visible for some time. Adjacent cells sometimes amalgamate to form giant cells with multiple nuclei.

SUMMARY

Amnion cells derived from full term placental tissue are satisfactory as a tissue culture for virus propagation, having certain inherent technical advantages over both HeLa cells and monkey kidney cells. Amnion cells have been shown to be susceptible to a sufficient number of different viruses to indicate their usefulness in diagnostic virology; more investigation is required to determine the entire range of virus susceptibilities.

TABLE I

	HeLa	Amnion	
Poliomyelitis, type I	10-6.0	10-5.0	} Four day readings
Poliomyelitis, type II	10-5.5	10-5.0	
Poliomyelitis, type III	10-5.5	10-4.5	
A.P.C. type III	10-4.0	10-3.5	} Seven day readings
A.P.C. type IV	10-4.0	10-3.5	

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Restaurant Design¹

C. F. BARRIGAN²

A CLEAN modern looking restaurant is invariably a successful operation and the reverse is true of an unsanitary place. Laxity in management and other factors promoting business decline are evident in unsanitary conditions. It is true that better cleaning is done when it is easy to clean. Sanitary considerations influence restaurant designing from the basic layout to the details of furniture, including floors, wall surfaces and fabricating material. There is a strong aversion to inaccessible areas that can be gathering places for refuse or breeding places for vermin.

Can we convince a restaurant operator that he should consider a major alteration, or in other words change a dirty place into a clean one? This operator knows that he cooks good food well and he knows too that his old wooden booths, delapidated stools and counter tables will accommodate customers; will hold plates of food and will function almost as well as suggested new equipment. In considering changes we appeal to his pocketbook. We do not argue costs or discuss comparative costs. We try to persuade him that it is a wise investment which will result in increased returns. We have found that alterations have, in the past, resulted in a 30% or better increase in turnover in most cases. Let us suppose that this operator is doing an average of \$200 in sales per day. If we can convince him that we could increase his turnover by 30% or \$60 a day, with no increase in overall labour cost, a major alteration will probably be made by him. If his food cost is 45%, his gross profit 55% and his break-even point is met or is less than \$200 per day, the gross increase will be 55% of \$60 or \$33 per day. If we multiply this by 360 days in a year, the total increase is \$11,880 in gross profits per year. The operator will be intent in trying to spend his \$10,000 or \$12,000, if necessary, wisely, in order to insure the potential increase of returns.

How could we approach the problem of poor sanitation? We could have insisted on a new dishwashing setup or new stock pots in the kitchen. The operator would have replaced his dishwashing equipment and his stock pots and our problem would still exist. How do we hope to keep this place clean? We believe there is an inherent pride latent in everyone, from personnel to clientele, that makes them respect something which is fine and beautiful and which is conceived for their own service and pleasure. This pride will minimize the dropped cigarette butts, table napkins, debris and mud from shoes, and when refuse and debris is deposited any place in a properly designed restaurant, this same pride will result in the almost involuntary removal of the offending debris by personnel before it gets a chance to accumulate. Let us take an example. Let us consider a difficult problem. The first consideration is the basic floor plan. Money comes in by way of sales and is related to the seating capacity. The general appearance of the front end of the restaurant and the way in which the food is presented influences the sale figure. The efficiency of production and service influences the cost of sales. Let us say that this restaurant has 1,800 square feet. We will allocate 600 square feet to the kitchen, 1,200

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²Barrigan Woodwares Manufacturers, Edmonton, Alberta.

square feet to the sales area. The seating capacity should accommodate about 80 persons and the kitchen should be adequate to provide for this number. As a normal restaurant operation 20 to 30 stools would be in order, arranged around 2 horseshoe counters, each with 12 stools. Why provide 12 stools? A waitress can properly handle from 10 to 16 persons depending on her ability and the volume of work. Why provide horseshoe counters? In this case the restaurant is approximately 20 feet wide and there is room to use them. The inside length of this counter accommodates 12 persons. The inside length of this counter setup of 12 stools is 8 feet and when the waitress is standing in the centre she is within 4 feet of each of the 12 customers, while if she were standing in the centre of a 12-stool straight counter, 24 feet long, she would have to move 12 feet to serve the customer at the end of the table. The balance of the seating should be arranged if possible into booths as follows: 2 booths for 6 persons, 8 booths for 4 persons, and 8 booths for 2 persons. This arrangement of the restaurant provides seating capacity for 84 persons. Why have so many small booths? It is found that most customers enter the restaurant in groups of 2, 3 and 4. Why provide booths? Less floor space is required than is needed when tables and chairs are used. Stools are stationary and provide uncongested aisles and clearly visible floor area. Usually customers show preference for booths. The reasons are varied but some of them are based on the condition of their clothing, their manner of dress, their table manners and a desire for some small amount of privacy with their meals. The floor plan should be arranged so that those serving will not enter the kitchen. This is accomplished by a pass-through opening for picking up food and another pass-through opening for the depositing of soiled dishes. This arrangement will save many steps and will leave the kitchen area exclusively to the cooks and helpers. This assists in the handling of a larger volume with the same labour costs. Closely adjacent to the pass-through opening, will be placed the containers for soup, bread, pastry and beverages and similar services will be arranged at the front end of the restaurant, possibly behind the counter, adding ice cream and soft drinks. On the kitchen side of the pass-through wall, will be located the table for hot foods and a unit for refrigerated salads and sandwiches, the range, grill and deep fat fryers. The cook should be in the centre of the kitchen if possible. The table for soiled dishes should be placed at the pass-through wall leaving the balance of the kitchen area for baking, food preparation and storage.

In a city restaurant of this size, we will need two wash rooms for the patrons, each containing wash basin and an enclosed toilet. If possible and practical, a separate washroom for the staff is desirable and every effort should be made to have a hand basin handy for the use of the cooks. Essential in the planning is a small room for the staff to change into and out of uniforms.

In regard to furniture and equipment, the budget may not allow all formica counters and back bars or the use of much stainless steel. Formica or similar material is desired for counter tops and edges. Chrome edging is undesirable because of its lip or open joint which prevents proper cleaning. The interior shelves can well be covered with linoleum which will stand the abuse of bus trays etc., and the exterior skirting may be finished in a plastic material such as Boltawall, which maintains appearance in spite of kicking or scratching. The

whole counter should be supported off the floor to a height of 10 or 12 inches and the unit can be kept clean because it is easy to clean. The booths should also be supported off the floor for the same reason. They should be upholstered in a long wearing easy to clean material, and if foam rubber cushions are used, breakage and lint problems inherent in spring and felt upholstery will be avoided. A space between the lower edge of the back and the seat will eliminate the collecting of food particles and dirt, and this space will allow cigarettes and other refuse to fall through to the floor where they can be easily removed. The booth tables will have preferably a Formica top and edges or material of equal quality, and will be attached to the wall and supported by a single leg at the outside. The pastry cabinets will have glass doors, enclosing a room temperature and a cooler-than-room-temperature compartment for displaying pastries, while the lower section of the cabinet will be fully refrigerated. The coffee urn stand should have a stainless steel top and a drip tray connected by a straight-through drain of at least $\frac{3}{4}$ " diameter leading directly into an open trap. This will eliminate stoppages and ease the cleaning problem. Stainless steel bus and silverware trays are necessary, which make possible cleaning and refilling by the dishwasher. Probably the investment in the soda fountain is not warranted, but an ice cream cabinet would be essential; equipped with refrigerated syrup pumps and fruit jars.

In the kitchen, modern ranges are designed with grill tops which clean easily and drain their grease into containers. Some fryers are designed to enable the clean fat to be removed each night for use the next day. The canopy over the fryers should be equipped with grease filters which can be removed and put through the dishwasher for easy cleaning. The older type of canopy, which condensed the grease on the ceiling of the canopy, allowing it to run through a collecting cloth into an attached container, is to be avoided. Such canopies are seldom cleaned because they are not easy to clean. The salad unit should have a refrigerated storage space, removable metal drawers or metal liners for bread and buns, and inserts for the sandwich and salad components, which are not only cooled but covered against the entry of foreign matter. Stainless steel inserts and covers are preferred in the hot food table and the cook's table should have an adjacent or overhanging pot rack, which will keep pots and utensils in sight where they will be unsightly if not kept spotlessly clean. The dishwashing setup deserves much consideration and should be equipped and located so that it will be the pride and joy of the dishwasher. First, a sufficiently large soiled dish table is needed. If the budget permits, a garbage disposal unit and prewash unit will save many hours and definitely minimize garbage collection. The dishwashing machine itself will be supplied to suit the preferences of the owner, but it is essential that a sufficient supply of high temperature water be furnished, along with the normal temperature water which is used in wash basins etc. Given a suitable dishwashing set-up, we must allow for sufficient table space for 2-4 racks of clean sterilized dishes, in order that they may air dry, and we must also allow sufficient clean shelving to stack clean dry dishes. A silver-dip section is also to be desired, and this whole set-up should be well planned and carefully constructed of stainless steel.

In a city restaurant not large enough to employ a special meat-cutter and unable to make use of tag ends of meat cuts, it is wise that meats be purchased

in portions and specified cuts. This is advantageous in that it will minimize wastage, spoilage and the necessity for storage and meat cutting equipment.

The sales floor should be laid wall to wall before any equipment or furniture is installed, with cove base to facilitate mopping. A tile of the best quality and thickness is preferred with a potential life of from 3-5 years. Tile can be replaced in areas that are subject to unusual wear. The lower walls, dados or rubbing surfaces should be of durable material that will resist scratches and initial carving, clean easily and require very little maintenance or refinishing, while the upper walls or ceilings can be strictly decorative. A sound absorbing ceiling is appreciated by the patrons.

Canned goods, vegetable storage and meat storage areas and facilities should, as far as possible, be adjacent both to the supplies entrance and the preparation areas. If the storage facilities are located where it is easy to use them, the various foods are more likely to be stored with a resulting minimum of shrinkage, wastage and spoilage.

Washrooms pose a problem that differ in urban and rural communities and from location to location. They are definitely a convenience to the customer but they are quite often considered as a necessary evil by the operator. Use of hand dryers rather than towels and wall mounted soap dispensers will eliminate the problem of litter. If the floors are easily scrubbable and the walls are finished to resist initial carving and permanent impressions from pencil or ink, the operator will find that they are easy to clean, and his customers will gain respect for his place of business.

Lighting will vary with the decoration and atmosphere of the cafe. Air conditioning is becoming increasingly a factor for consideration. A range canopy alone will exhaust 2,500 to 5,000 cubic feet of air per minute, and this air will have to be replaced by new air entering the premises by some means. If this replacement air enters through open doors or around doors and windows, through cracks, it will be insufficient in quantity, or will be in gusts from the street level, carrying dust, odors and disease germs. If it enters by way of a controlled supply system, it will be at outside temperatures and will have to be heated in the winter and cooled in the summer. Air conditioning is probably the most difficult portion of a restaurant operation to justify and to sell to the operator, as it is non-revenue producing and most operators have carried on without it. Time and experience will help people to realize the importance of this item.

Colour is also important and colour schemes are many and varied. It is desired to please the food consumer rather than the operator in the matter of colours. When one is not sure of the colours, a colour expert should be consulted before ruining a good interior.

The salient points in this presentation have been first—that a clean restaurant will be a profitable one; second—that better cleaning is done when it is easy to clean; third—that the inherent pride in all people will prompt them to keep a clean establishment if they are properly appealed to; fourth—that the profit motive will quickly create the desire to operate a clean restaurant; and finally—proper design of furniture, equipment and layout is a large factor in the end result.

What the Department of Public Welfare Offers the Needy of Nova Scotia¹

MISS BEATRICE CROSBY²

IN describing the purposes and functions of the Provincial Department of Welfare then let me define "welfare". A dictionary definition is "a state or condition of well being, good fortune, happiness or prosperity". At first glance it would seem that we may be using the word a little loosely. However, our first purpose is to improve the general state or condition of those who, for one reason or another, come to us for assistance. We try to do this by helping the individual to help himself.

Our social legislation dates back to England and the year 1601. In that year Queen Elizabeth I passed her 49th Act that has become known as the Elizabethan Poor Law. Here for the first time it was publicly recognized that a certain group in the population needed assistance and that the state had some responsibility in providing for their needs. Until this time the poor had been helped by religious orders in the monasteries and certain members of the nobility who felt some personal responsibility for helping their fellow men. When Henry VIII closed the monasteries the situation became urgent and Queen Elizabeth recognized the necessity for setting up some form of social legislation.

The first law provided for the care of three groups of needy, the old, the ill and children. These three groups were to be cared for in three separate buildings and were to be kept apart from one another. Institutional care was the only known type of assistance. Because of financial strain, the separate institutions were not built, and old people, mentally defectives and children were all placed in one dwelling known as the Alms House. The situation soon became impossible and a plan of separate care had to be worked out. Gradually a system of boarding home care was devised. Instead of sending children and old people to the Alms House, they were given to families and a fee for their maintenance was paid by the state. After many more years, some legislators realized that many of the needy could stay in their own homes if they only had money, so a system of out-door relief was established. A principle that persons should not be moved from their own homes merely for financial need came to be recognized and fewer people were sent to institutions—only those who could not possibly remain home.

In the past two hundred years more and more attention has been given to the plan of keeping the needy in their own homes whenever possible and the trend has been to eliminate institutions except for the comparatively few people who will always need that particular type of care. At the present time we try

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to provide for the needy in their own homes and in a setting which resembles as closely as possible their normal environment. Institutional care is provided now by the Department of Public Welfare for only two groups, mentally defectives and delinquents—all other assistance is provided in the individual separate environment.

Generally speaking the help we are now able to give is divided in two broad categories, financial assistance and case work services. The first group consists of the needy whose problems are entirely financial. The greater number of our needy are in this group. They are normal, well adjusted individuals who need only the help of a regular income to solve their difficulties. In our Mothers' Allowance program, for example, we are presently paying an allowance to 2,500 families in the Province. In these family situations the father is either dead or is prevented from supporting his children by a total and permanent disability. We feel that about 90% of these families are capable parents who are bringing up their children in a healthy happy home atmosphere. All they require is a cheque each month. It is true that some of them need more than the \$80 maximum we are able to give. The fact remains, however, that money will solve their problems.

The second group are families that need something more than money. Perhaps there is a marital difficulty, or lack of ability to give the children the understanding and care they need. Perhaps the father finds it hard to adjust to his illness and to accept the fact that his wife is getting public assistance. Perhaps a child is becoming a behaviour problem, or because of the insecure financial situation, wants to leave school, when it seems wiser to continue his education. Our workers by case work services, counselling and sometimes referrals to other community resources are able to help with these problems.

The third group are those who may have no particular financial problems, but nevertheless need help and guidance. The unmarried mother asks for help in planning for her confinement and, later, placement of her child. The parents of a mentally defective child want assistance in making suitable provision for his care, or his placement in a training school. The young couple wanting to adopt a child, come to us hoping that we will be able to find just the right baby for them.

These three groups we consider "needy". The first needs only financial help, the second counselling and money too, and the third have problems which fundamentally cannot be solved by money. Now let me tell you briefly how we try to help them.

We have five district offices situated throughout the Province at Halifax, Antigonish, Stellarton, Sydney and Digby, and the offices are all directed by a trained supervisor. Our provincial administration office is located at Halifax. We have a social work staff of forty.

Some parts of the province are not serviced by any other social agency. In these districts our department provides the only welfare service and acts as a Children's Aid Society.

Now let us look at the needy in age groups. As you know Old Age Security is paid to everyone over 70. This assistance is paid and administered by the federal government, but our department does the social investigation for the

Department of National Health and Welfare. If a recipient for Old Age Security has a social problem which is brought to the attention of the Dominion Government a member of our field staff is asked to visit the home. When the problem cannot be handled by him a referral is made to the proper department.

Our Old Age Assistance program provides an allowance up to \$40 a month for certain needy individuals between the ages of 65 and 69. The assistance is granted on a means test but a couple could receive an income of \$80 Old Age Assistance. If they have any other source of income Old Age Assistance will supplement it up to a maximum of \$1,200. In October, 1955, Old Age Assistance was paid to 5,200 people in the Province.

Blind Persons' Allowances are payable to certain needy blind persons who are over the age of 18 and 700 blind persons receive this allowance. Disabled Persons' Allowances are granted on a means test to 1,050 totally and permanently disabled people over 18. These three programs are operated in co-operation with the federal government. The Dominion pays a percentage of the allowances but the administration costs are borne by the Province. A field staff of 15 handle the investigations for these three programs.

Mothers' Allowances are paid to dependent children whose fathers are either dead or disabled. In October, 1955, allowances of about \$127,000 were paid in the province. Mothers' Allowances are granted on a budget basis and an allowance up to \$80 may be paid to a mother. Assistance may be paid until a child is 18 if the child is making satisfactory progress in high school.

Through an agreement with the Nova Scotia Medical Society we are able to provide a plan of limited medical care for our Mothers' Allowance beneficiaries. Last year, almost \$80,000 was paid to Maritime Medical Care who administers the plan. The plan seems to work well and we feel that the families are receiving a great deal of benefit from the service.

Last year, we paid Mothers' Allowances to 1,984 mothers. It is interesting to note that of the 789 wives who received Mothers' Allowance, 231 husbands were receiving treatment for tuberculosis. Of the 1,195 mothers who were widows only 102 husbands had died of tuberculosis. We think that these figures give some indication of the fact that through the cooperation of the Department of Public Health and the Department of Public Welfare more fathers are able to take a longer period of convalescence while their families are being helped by Mothers' Allowance.

The Probation Section of the Department gives service to both juveniles and adults. The staff members work with juveniles on probation and parole, assist in work placements, and provide special services for children in reformatory institutions. Adult probation workers provide social investigation for the courts and for Dorchester Penitentiary.

As part of this section the Department operates the Nova Scotia School for boys at Shelburne. This institution cares for 75 delinquent boys who have been committed there by the courts. Besides the regular school curriculum, courses in pottery and woodcraft are provided and some training is given in shoemaking and printing.

The Department also has a psychological service. This service is available to other sections of the Department, and accepts referral from parents, doctors, public health nurses, etc. Psychological tests are given and counselling

service is available to parents. The second departmental institution, the Nova Scotia Training School in Truro, is operated in connection with this service. Here mentally defective children are cared for and a limited training plan is carried out. Generally speaking the school accepts the trainable mentally defective child who will eventually be able to go back to the community. However, a few low grade mentally defective children are now being cared for at the school.

The protection workers in the Department investigate cases of actual and possible child neglect which come to their attention. If after a period of work with the family it seems evident that there is actually neglect and the possibility of improvement is remote court action is resorted to. Children removed from their parents and made wards of the Department remain under our care until they become 21 years old. They are placed in suitable homes and the necessary care and service is provided by us.

You will see that caring for a child until he is 21 involves a great deal of work and planning. Boarding homes must be secured, medical services provided and suitable education has to be planned for every child. Last year the Department had 585 wards. Three hundred and eight-one of them were cared for in boarding homes. Of the remaining number, some were in adoption homes, some in free homes, institutions, universities, and 48 were self-supporting. The children in boarding homes were visited on an average of five times during the year.

An unmarried mother referred to us gets help and guidance in making plans for her confinement. If she decides that she will not keep the child an adoption placement is arranged. Sometimes boarding care is provided if the mother feels that she may want to take the child at a later date. On occasion the child of an unmarried mother is made a ward. Last year 273 unmarried mothers were helped by the Department. The Adoption Act provides that a waiting period of one year is necessary before an adoption can be finalized, and that at the time of the hearing a recommendation from the Director of Child Welfare must be submitted to the court. This involves two visits to the adoption home by our worker, usually one immediately following the placement and the second just before the year's waiting period is up. The adoption worker also makes social studies of the parents who apply to adopt children. If the applicants are considered to be good potential parents a child is placed in their home whenever possible.

The Public Charities fund is also administered by our Department. This sum of money is set aside by the legislature every year to provide for transients and for certain other needy persons who have no settlement in the Province. Hospital accounts, emergency relief orders and transportation costs are the three main expenditures made from this. Last year \$7,500 was spent on this program.

In closing let me take this opportunity of thanking the public health personnel throughout the Province who are of constant assistance to us in our work. Dr. Robertson is presently acting as our medical adviser. Without the cooperation of Dr. Hiltz, Dr. Shane, Dr. Robb, Dr. Beckwith and all the medical health officers it would be almost impossible to administer our Mothers' Allowance program.

The Employer's Place in an Occupational Health Program¹

MILDRED I. WALKER, Reg.N.²

WHY should an employer supply a health program for those who work for him? Can we prove to him in dollars and cents that he should? He must make a profit or he will go out of business. He must take risks, take chances on new products, new people, new employment policies and practices. And in it all, his assets must be greater than his liabilities. Here are some answers: It is good business to have happy, healthy satisfied employees. Again, it is good business to have an adequate health program, as well as a benefit program, to attract employees to the company, and encourage them to remain. In any community most companies today want to be identified by their employees and members of their families as a "good company to work for".

Generally speaking, a growing company with good working conditions is constantly expanding its output, improving its efficiency and increasing the individual productivity of its employees. This process usually results in periodic increases in pay—and some of the increase may take the form of health and security benefits, particularly when a company can extend services which may be of greater value per dollar to the employee than an actual wage increase. It should be noted that a health benefit is part of the wage paid, not a gratuity, especially for non-occupational health and sickness services. A survey of fringe benefits in the United States, incidentally, shows fringe benefits total about 1.8% of the amount of the payroll.

Even if an employer or the management of a company does realize the economic and humanitarian value of healthy, well-adjusted workers, he may not know how to obtain the service. Here is where the public relations of the health professions begins and continues. This is where you and I come in.

It might be well to recall what is meant by management and to consider the different kinds of employers. What do we mean by management? We mean either an individual employer, a family, stockholders, trustees as in a university, government or any group of people who are delegated to operate a business for its owners. Management can also mean the techniques that managers employ in accomplishing their objectives.

In the textbook "Personnel Administration" (1), management is spoken of as the technique of getting effective results with people. A good administrator gets people to work with him—a kind of leader for whom employees wish to do their best. He does this in collaboration with other people in his organization, and all the technical competence in the world will not suffice if his subordinates

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are working against him or grudgingly for him. The problem of winning whole-hearted cooperation is the central, ever-present problem of management. Thus, there is mutual dependence between employer and employees.

Now let us look at the employer, or the most senior executive officer. What are his basic beliefs about people and work? What is his administrative philosophy? Does he do everything himself, or does he delegate authority, or does he just let things run? Other considerations are his training and background; his history with the company; the circumstances relating to his rising to the top; his age; and the influence of formal organizational pressures and informal pressures. Finally, it is important to note the decision-making type which he represents. To make a decision, the executive officer must secure all the available facts, advice, data and assistance required. And when he makes a decision, he must accept the responsibility for it. That is what makes managers different from workers. However, the employees help him to improve his competitive position—interest begets interest and health personnel are a real strength in the total employment picture. It might be remembered that a president of a company is generally considered to spend three-quarters of his time in the human relations aspects of his company and only one-quarter on long- and short-term planning.

Every employment situation is similar but each has unique characteristics. And so we must recognize what variety of work hazards exists and the protection necessary for the personnel who assist in this particular production. Food-handling industries must stress strict health and sanitation standards, while chemical-producing companies must watch for situations in which chemicals may constitute a physical hazard.

In regard to the employee, every public health worker should know the conditions of employment by which the family lives. Obviously the economic picture of the family looms as a large factor in the success of the community and provincial health services.

What should the employer expect from an employee? He should expect, for one thing, physical ability. The worker should be able to meet the physical demands of the job. And in this connection it is noted that when the physical abilities of handicapped people are successfully matched with the requirements of jobs, disabilities do not constitute a job factor. The employer will also expect that the worker should not be a hazard to himself or to other workers. He should not expose himself to dangerous work habits and should respect the rules of safety. The management should know about the personal health of the worker. For example, if a worker has a skin allergy, the management should be aware of this fact so that it may be able to arrange suitable work. The same principle applies to other conditions such as diabetes, or other diseases which an employee may have and which will not be a hazard if he is properly placed in his job.

OCCUPATIONAL HEALTH PROGRAM AS PROVIDED BY MANAGEMENT

Care and Treatment

Management as an employer or as a team provides medical direction, keeps the personnel of the employees' health service informed about new plant processes and materials, and provides adequate space, equipment and supplies.

Physical Examination

Management provides information about job demands, materials and processes. The industrial (plant) physician does the physical examination and determines the prospective employee's physical fitness as a factor in placement.

Health Education and Counselling

Management does four things. It includes health education in a training program for new employees. It provides space and facilities for pamphlets, posters and meetings. It approves and supports cooperation with community programs and surveys, and it provides space for private counselling. The industrial physician and nurse participate in planning the scope and methods of health education programs and in actual counselling and health education activities.

Safety

Management provides five things: provides safe environment and equipment; keeps its plants sanitary; handles Workmen's Compensation and insurance benefits; provides channels for keeping the employees' health service informed about benefits, particularly changes, and provides facilities and time for training of first-aiders.

Coordination with Community Health Programs

In addition to participation, members of management give support to community programs such as chest surveys, civil defence programs, and approve observation or experience for visiting or student nurses. The plant physician and nurses keep in touch with local physicians, hospitals and community health and welfare agencies.

Supervision of Illness-Absence

Management keeps the employee health service informed of illness-absence and accepts the physician's or nurse's opinion about the need of the employee to go home or to return to work. The physician works with and through the family physician on illness-absence cases of long duration.

Records and Reports

Management accepts the confidential aspects of medical records. The physician participates in deciding on the scope and content of records and may write some or all of the monthly or annual narrative reports. The nurse keeps the daily log and the individual records of employee visits which are the basis of the monthly and annual reports of the health service to the executive officers.

Administration

Management gives whole-hearted understanding and support to employee health services and programs, and provides medical direction with access to top management, machinery for orienting new employees to health and safety services and written policies under which the employee health service is to function—policies in which the physician and nurse participate in formulation. Management also keeps the employee health staff informed of new processes,

materials, benefits and agreements; recognizes legal, ethical and professional principles of medical-nursing service in industry; establishes rates of pay in keeping with the status of the doctor and nurse; and recognizes the need for doctors and nurses to attend and participate in professional meetings.

All this is possible only through good communications. The nurse and physician must always interpret their services to members of management and employees. We are too prone to think that our value should be recognized without this interpretation, although our value in dollars and cents has been proved beyond doubt where good service to industry has been given and has been understood.

Large industries have already realized the value of health services. Figures for Canada, the United States and Britain show that large industries, numbering only 2% of the total number of industries but employing about 30% of all workers, now have health services. Small work situations, however, have very little or no health service available to their workers.

The greatest need is to interpret this idea of a health service to all employers and to find the personnel who have an understanding of it. When this level of achievement is reached by health personnel, the goal of health services with the family unit as the basis will be realized.

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THE DONALD T. FRASER MEMORIAL FUND

The Graduates' Organization, School of Hygiene, University of Toronto wish to announce that a fund in memory of the late Donald T. Fraser, Professor of Hygiene and Preventive Medicine, University of Toronto has been established. The memorial fund committee have felt that the memory of Dr. Fraser can best be perpetuated by donating a medal to the University of Toronto for presentation annually to the post-graduate student completing a course in public health in the School of Hygiene, University of Toronto, who in addition to having had a high academic standing, gives the greatest promise of making a real contribution to public health. It is the intention that the medal be presented at the Annual Meeting of the Canadian Public Health Association. If the fund is sufficient, part of the award will be used to defray the expenses of the recipient in attending the meeting. To date, members of the Graduates' Organization have raised a fund slightly in excess of \$1000.00. However, many of the pupils and friends of Dr. Fraser have not had the opportunity to contribute to this memorial project. Anyone interested in becoming associated with this endeavour should send their contributions to the Donald T. Fraser Memorial Fund, in care of Dr. J. H. Baillie, 393 University Avenue, Toronto, or Dr. A. W. Peart, 150 St. George Street, Toronto.

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Blindness Control in Canada

ONE of the earliest homes for the blind was the Congregation of the Three Hundred founded in Paris in 1254 to provide a home for war-blinded crusaders. This institution still exists as an eye hospital. In England the Poor Law, in the seventeenth century, provided assistance to the blind and in many countries, philanthropic organizations began working for the blind. However, it was not thought possible to educate the blind until Valentin Haüy founded a school in Paris in 1784. Two years later, his first pupil noted he could identify embossed letters by touch and from this observation Haüy developed a raised script which could be read slowly. This was superseded by the dot system of writing invented by Charles Barbier in 1819 and improved by Louis Braille in 1829. The Braille system is now universal. Following the example of Haüy, Schools for the Blind were soon established in Great Britain and in other European countries. The first school in America was started in Boston in 1832 under Dr. Samuel Gridley Howe. The first in Canada, the Nazareth Institute, was opened by the Grey Nuns in Montreal in 1861. The Canadian National Institute for the Blind was founded in 1918 by Colonel E. A. Baker, the first Canadian officer to suffer blindness in World War I. He planned the work of the Institute on his experiences as a patient in St. Dunstan's Hospital in London. The Canadian National Institute for the Blind has been active ever since in the rehabilitation of the blind and was instrumental in influencing the government to provide pensions for the blind in 1937 in cooperation with the provinces.

The prevention of blindness presents many problems, not all of them surmountable, since half of all blindness is not preventable. In this issue, Dr. J. H. Grove, Chief of the Blindness Control Division of the Department of National Health and Welfare, reviews the incidence and causes of blindness and some of the possibilities of prevention and cure. He points out that his division can only exert a limited effect in the control of blindness since prevention from a public health standpoint is a provincial responsibility. Nevertheless, the division has been able to do more than conduct an educational campaign for the preservation of vision. It initiated in 1948 a treatment scheme designed to restore sight to blind pensioners with remediable conditions. At first, three

provinces cooperated and now nine provinces are participating in the plan. Authority for treatment must first be secured from the Blindness Allowance Authority of the Provincial Welfare Department. The patient has choice of an oculist. The scheme pays oculists' fees, hospital costs (semi-private), special nurses, post-operative glasses and patient's transportation. Vision has been restored, principally through cataract extraction, to 210 of 285 blind pensioners. In a number of cities under the National Health Grants Program, glaucoma clinics are now being conducted and research studies in eye diseases have been fostered in universities and hospitals under the health grants.

The considerable progress in the prevention of blindness in the past fifty years resulted mainly from advances in medical science and not from planned attacks on eye problems by health authorities. A notable exception has been the eradication in Canada of ophthalmia neonatorum of gonococcal origin through the requirements of provincial health departments that physicians instil 1% silver nitrate drops into the eyes of new-born infants.

Although much blindness is inevitable, being due to congenital defects and from conditions associated with old age, we can reduce blindness due to infection and from conditions amenable to surgery. Why, therefore, should so much blindness occur? The reasons are many. Frequently the facilities for prevention are inadequate. Sometimes the patient is too poor to obtain medical help. Often the cause is ignorance or indifference. A survey of the problem shows that increased public health and welfare efforts are necessary to reduce the increasing toll of blindness. This will require the extension of existing services and the creation of new ones. It involves the extension of social services—a subject which is prominently before us today.

Dr. Grove states some of the needs for a more effective program. These include the provision of travelling eye clinics which would greatly assist in preventing blindness in certain rural areas of Canada. This is a recommendation which merits the consideration of the Provincial Departments of Health. Since glaucoma is responsible for 11% of blindness and the disease is increasing in frequency, additional glaucoma clinics are needed to combat this insidious disease. There is need, too, to do more in industry in safeguarding the vision of workers through protective measures and better lighting and there is an urgent need for more facilities to educate children with poor vision.

Much has been accomplished in Canada in the control of blindness by the Federal and Provincial Departments of Health and by voluntary agencies, particularly the Canadian National Institute for the Blind. However, the problem of blindness control demands more attention. It calls for more study by health departments, of increasing interest in the prevention of blindness by the medical profession and in the final analysis, it must have the approval and cooperation of every citizen in Canada.

Letter from Great Britain

Social Surveys (The Handicapped)

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IT has been said that the state of civilization in any society can be judged by the manner in which it deals with the handicapped. For long enough the more compelling problems of infections have obscured the very existence of the handicapped as a public health problem. Indeed the growing interest in problems of the handicapped most clearly reflects the enormous improvements that have taken place generally throughout the public health field. Action in this new field must depend upon knowledge and it is only too true that we are largely ignorant of the nature of the problem which the handicapped present. This has lent particular interest to the few social surveys which have been undertaken.

The most valuable of these was conducted by the Department of Social and Preventive Medicine in Glasgow (1). The study was undertaken on behalf of the Medical Research Council in order to help the Ministry of Labour to a better understanding of their responsibility under the Disabled Persons (Employment) Act 1944. This act, it will be recalled, required, among other things, that all employers of more than 20 persons should include 3% of persons whose names appear in the Ministry of Labour Register of Handicapped Persons—the basis of admission being a substantial handicap.

Two groups of handicapped young adults were investigated (1) consisting of 579 actually registered under the act and (2) consisting of 408 adolescents who had left schools for the physically handicapped (of whom only 30% were registered under the act). As an aid to the understanding of the significance of these findings the results were compared with a group of supposedly normal boys (1,349) who left ordinary schools in Glasgow at the age of 14 years.

The survey set out to determine what relationship existed between the nature of the disability (classified in accordance with the code in Medical Research Council, Spec. Rep. Ser. no. 248) and the various other considerations, e.g., the type of work—non-manual, skilled and unskilled, the extent of employment (recorded as a proportion of idle months to months since leaving school), the frequency of change of work or the presence or absence of stability and satisfaction. Social class distribution was also studied, as was the extent of registration under the Disabled Persons (Employment) Act 1944 and its effect upon employment.

This report should be read by all those interested in this aspect of social medicine—a most important addition to public health responsibilities. The concluding observation of the report that “it is impossible to view with other than apprehension the circumstances disclosed by the study of the welfare of disabled young people” is probably equally, if not more, true in most other developed countries. The handicapped young adult is seen as fatally accepting a life without fulfilment. One in six were in urgent need of help of one kind or another, which in about half the cases was medical treatment. This is much to be deplored since medicine and surgery can do much to lighten the disability. Tuberculosis, epilepsy, spastic paralysis and mental insufficiency are the most prone to cause unemployment. The tragic and complicated socio-medical background of the epileptic is well illustrated—frequent changes, or worse, no employment unless the fits are controlled, with little supervision is the general picture. So too are the dangers which follow immediately upon leaving school for the mentally handicapped, when “a few weeks of idleness after leaving the discipline of school might be fatal to the future of the youth and render him unemployable”.

The report calls attention to four guiding principles for the improvement of the present deficiencies:

(1) It is of vital importance that these children should have the best education possible and that it should be directed specifically to a type of work suited to their disability.

(2) Energetic steps to secure satisfactory settlement must be taken before the young person begins to drift.

(3) The serious lack of training courses for disabled young people must be remedied.

(4) Medical and surgical treatment must be intensified together with the provision of any necessary medical and surgical appliances.

A further survey was made subsequently (2) of 1096 disabled persons drawn from 30 employment exchanges in Scotland, together with 705 disabled who were at the time registered as unemployed. This has thrown further light on the working of the Disabled Persons (Employment) Act 1944 and has also brought out “the lack of effective follow-up particularly of the young disabled”. Clinical conditions making a serious contribution to substantial handicaps were tuberculosis, peptic ulcer, psychoneurotic state, epilepsy, spastic paralysis, bronchitis and heart disease. The clinical conditions are known but, as the report says, there is a general ignorance of the many medical and socio-medical implications of substantial handicap. These are in need of much deeper study. This report adds the further suggestion that substantial handicaps in persons between 7 and 20 years of age should be notified to health departments.

The broad lines in the picture of social medicine as part of public health are slowly filled in.

REFERENCES

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NEWS

Federal

FEDERAL APPROVAL of more than \$392,000.00 in further hospital construction grants to the provinces has been announced by Health Minister Paul Martin. These grants include more than \$216,000.00 to support Ontario projects, and \$138,000.00 for hospital construction in Alberta. A grant of more than \$2200.00 was made to Victoria General Hospital, Halifax, to assist in extending facilities for the central laboratories of the Nova Scotia Department of Public Health. A grant of \$35,000.00 was made in Quebec to Saint Mary's Hospital, Montreal, for expansion of its school of nursing.

The Honourable Paul Martin in opening the 1956 Mental Health Week in an address in Montreal viewed the progress in the field of mental health in Canada. The annual sums available to the provinces under the mental health grant have been increased from an initial figure of \$4,000,000.00 in 1948 to more than \$7,000,000.00 this year. This grant represents \$1.00 out of every \$10.00 now spent on mental health services in Canada. Out of a total of \$44,774,000.00 in federal funds available over the past eight years, the provinces have been able to utilize more than \$36,000,000.00 for improvement of services in this field. In 1948 there were less than 20 mental health clinics in Canada. Today there are over 130 out-patient services and mental health clinics. Eight years ago, few, if any, general hospitals included psychiatric units. Today, 44 hospitals offer these services. Federal grants have enabled no less than 1209 psychiatrists, psychologists, nurses, social workers and other professional mental health personnel to receive needed professional training. In 1948 only two research projects received federal assistance, totalling \$1,000.00. For the current fiscal year 58 research projects have been approved and federal financial assistance totals more than \$527,000.00. In addition to the mental health grant, assistance totalling some \$20,000,000.00 has been made available under the hospital construction grant to help provide more than 14,000 additional hospital beds for the mentally ill.

British Columbia

Miss Trena Hunter, Director of Public Health Nursing for the Metropolitan Health

Committee of Greater Vancouver, was elected president of the Canadian Nurses' Association at the last bi-annual meeting in Winnipeg.

Dr. Frank McCombie, Director of the Division of Preventive Dentistry, Provincial Health Branch, has been selected from candidates across Canada to undertake a one year's assignment under the auspices of the Colombo Plan, with the Department of Dentistry, University of Malaya, Singapore. He will act as a consultant and plan a program of epidemiological research in relation to dental diseases and abnormalities prevalent in Malaya. During Dr. McCombie's leave of absence, Dr. C. W. B. McPhail will be Acting Director and will make regular visits to Victoria while continuing his present duties as Regional Dental Consultant in the Fraser Valley area.

Saskatchewan

To assist smaller hospitals in improving standards of dietary service, a school for cooks will be held at the Canadian Vocational Training Centre, Saskatoon, October 15 to 17. The course is being sponsored as a co-operative venture by the Saskatchewan Department of Public Health, the Nutrition Division of the Department of National Health and Welfare, and the Canadian Vocation Training Centre. Some 20 hospitals lacking the services of a dietitian have been invited to send to the school full-time cooks who have been on staff at least two years. Training will be given in menu planning, kitchen organization, sanitation, and special diets.

Dr. M. S. Acker, Director of the Research and Statistics Branch, Department of Public Health and Secretary-Treasurer of the Saskatchewan Branch of the Canadian Public Health Association has been granted leave of absence to accept an appointment with the World Health Organization as consultant for a two-year project in Singapore. It will involve a survey and revision of hospital records system and the creation of a new training program.

Manitoba

Leadership Training Course

DENTAL HEALTH, home nursing, nutrition, sanitation and health education were among the subjects covered in the course held in

Winnipeg during the month of July for persons from unorganized territories in Manitoba. (Indians and Metis.) The course was sponsored by the Manitoba Branch of the Canadian Association of Social Workers.

Nova Scotia

The following nurses have entered Dalhousie University for the basic course in Public Health Nursing: Mrs. Darlene Letcher of Springhill, N.S., Miss Doreen Johnson of New Glasgow, N.S., Miss Annie Mae MacDougall of Antigonish, N.S., Miss Martha Smith of Nyanza, N.S., Miss Ruth Anderson of Saskatchewan, Miss Amy Elliott of Ottawa, Ontario, Miss Florence Thibault, Digby, N.S., and Miss Bernice Myers, Head of Jeddore, N.S.

Miss Anne Audas of Truro, and Miss Phyllis Kelly of Hantsport have been granted bursaries to enable them to train as dental hygienists. This will bring the total of dental hygienists now in training up to five.

The following nurses have resigned from the Provincial Public Health Nursing Division: Miss Mabel Shaw, Miss Patricia Sutherland and Miss Phyllis Lawley.

Miss Mabel Sponagle, Public Health Nurse in Truro, has been married and is now Mrs. Walker. Miss Marie McGarry, Public Health Nurse in Antigonish, has been married and is now Mrs. Chisholm. Miss Margaret Hartigan, Supervisor of Nurses, resigned from the Cobequid Division to be married. She is now Mrs. Brian and is living in Amherst. Miss Hartigan had been a member of the Department for twelve years.

New Brunswick

Halifax Workshop

Mr. G. W. CRANDLEMIRE, Co-ordinator of Rehabilitation for New Brunswick, attended the Atlantic Workshop on Rehabilitation held at St. Mary's University from June 4

to June 8 where he acted as leader of a panel discussion on "The Intake Process". Others attending the workshop from New Brunswick Department of Health and Social Services were: Mary McLellan, Rehabilitation Officer, River Glade Sanatorium; Mr. Matheson, Social Worker, Provincial Hospital, Lancaster; Mr. E. Anderson, Acting Chief Welfare Officer and Director of Pensions; Mr. G. Robichaud, Rehabilitation Officer, Moncton; B. Steeves, Gunningsville, and H. J. Richard, Shediac, Pensions Investigators.

Council for Crippled Children

THIS NEW COUNCIL was organized last May at a meeting at the Lord Beaverbrook Hotel, Fredericton, with representatives of provincial voluntary organizations. Executive council was named and Mrs. D. R. Marshal, Reg. N., was appointed permanent executive secretary of the council with a full-time office to be located in Saint John. Organizations belonging to the Council will refer their cases of crippled children to this office to ensure that each child receives the attention of the member organizations which are best suited to meet the need, or wherever applicable, in the event of orthopaedic defects, the health department will provide the required treatment.

The Hon. J. F. McInerney stated that the government would contribute to the maintenance of the permanent office for the first three years. The New Brunswick Crippled Children Society and the New Brunswick Polio Foundation are each to contribute one-third of the cost. The formation of this new co-ordinating council was the result largely of the efforts of Dr. J. R. Mayers, Director of Maternal and Child Health.

It is pleasing to report that Mr. Alwyn Cameron, Provincial Sanitary Engineer, is convalescing satisfactorily after a serious illness.

ASSOCIATION NEWS

Minutes of the Public Health Nursing Section of the Canadian Public Health Association Meeting, Saint John, New Brunswick, May 29, 1956

At the business meeting Miss E. A. Electa MacLennan, Director of the School of Nursing, Dalhousie University, Halifax, chairman of the Section, presided. A roll call by provinces showed two representatives of Ontario; one, Quebec; eight, Prince Edward Island; twenty, New Brunswick, and nineteen, Nova Scotia.

There were four nurses present from the Federal Department of Health, Ottawa. A discussion was conducted on the status of the section. One problem is the lack of continuity. Few nurses are able to attend consecutive meetings of the section as it is held as part of the National meeting which is held in turn in the western, central

and eastern areas of Canada. The chairman presented a report of the Committee on the preparation of a manual of procedure. The report was as follows: At the Annual Meeting in September, 1955, the chairman and secretary were named a committee to prepare a manual for the guidance of the officers and members of the Public Health Nursing Section. The committee met in January and searched the records for rules and regulations. Following correspondence with members who had held office in past years, procedure, and policy were obtained. Miss MacLennan moved the acceptance of this report for discussion.

This report was entitled "Information For The Guidance of Officers or Members of Public Health Nursing Section, Canadian Public Health Association" and read as follows:

1. The governing body of the Canadian Public Health Association is the Executive Council. This body functions at the time of the Annual Meeting and delegates its authority and responsibilities to the Executive Committee which is responsible for the work of the Association between the Annual Meetings. The Executive Council is composed of elected officers, the past residents, two representatives of each of the provincial public health associations and the chairman of each of the sections of the association. The Executive Committee is appointed also at the Annual Meeting.

2. The Public Health Nursing Section is composed of all nurses who are engaged in any field of public health nursing.

3. The Executive of the section is composed of chairman, vice-chairman and secretary.

4. There are no by-laws governing the functioning of a section in the Association. It is customary to appoint two standing committees, nominating and resolutions and other committees are appointed as the need arises. The chairman and secretary are elected for a period of two years, each in alternate years, in order to provide continuity.

The vice-chairman is to be appointed yearly by the chairman and should be resident in the city or province in which the next annual meeting will be held. The vice-chairman participates in the program planning for the annual meeting.

5. The section has no budget apart from the association's budget. Letter-head paper and envelopes and postage etc. are furnished from the central office in Toronto.

6. The program for the annual meeting is planned by the local provincial public health association, in consultation with the Central Program Committee of the association at the central office in Toronto which has the primary responsibility for the program of each annual meeting of the National body.

7. The procedure for preparing for the annual meeting is as follows: the host provincial association names the following committees: Local Organization Committee of which the provincial president is chairman, Program Committee, Exhibits Committee, Finance Committee, Rooms and Accommodation Committee, Entertainment Committee, Publicity Committee. The coordinator of the planning is the Honorary General Secretary of the Association in the central office in Toronto.

8. The Secretary of the Public Health Nursing section of the Association advises the local program committee concerning the number of sessions the section wishes to hold, size of rooms required, speakers to be invited and other items requiring arrangement or attention.

Miss Laws suggested that a further study of the Baillie-Creelman Report might be profitably made. After discussion it was decided that this be done informally at the local level.

The following officers were appointed: Chairman, Miss Mary E. Wilson; Vice-chairman to be appointed; Secretary, Miss Phyllis Lytle; Chairman of Nominating Committee, Miss Esther Robertson; Chairman of Resolutions Committee, Miss Mildred I. Walker.

